WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. A production system for the series manufacture of products,

- having at least one processing device (2) for the automatic processing of products, the processing device (2), as a function of control commands, actuating at least one tool for processing one of the products,
- having at least one measuring device (3) for the automatic measuring of at least one geometric actual dimension (15) at one of the products processed by the processing device,
- having a correcting device (4) which is coupled to the processing device (2) and to the measuring device (3) and which compares the at least one measured actual dimension (15) with a preset target dimension (8) which lies within a tolerance interval (9) having an upper tolerance limit (10) and a lower tolerance limit (11), the correcting device (4) intervening in a corrective manner in the control commands of the respective tool if the actual dimension (15) lies outside an intervention interval (12) which lies with an upper intervention limit (13) and with a lower intervention limit (14) within the tolerance interval (9).

2. The production system as claimed in claim 1, characterized in that the processing device (2) is designed for the automatic machining of products and, as a function of control commands, actuates at least one cutting tool for machining one of the products.

3. The production system as claimed in claim 1 or 2, characterized in that the correcting device (4) permits a preliminary operating mode (17) in which the

correcting device (4) orients the intervention interval (12) centrally to the target dimension (8) or centrally to a predetermined cumulative tolerance (21) to be adhered to by the current production batch with regard to the actual dimension (15).

4. The production system as claimed in one of claims 1 to 3, characterized in that the correcting device (4) permits a preliminary operating mode (17) in which the correcting device (4) keeps the intervention limits (13, 14) constant.

5. The production system as claimed in one of claims 1 to 4, characterized in that the correcting device (4) permits a preliminary operating mode (17) in which the correcting device (4), irrespective of whether the actual dimension (15) is within or outside the tolerance interval (9), corrects the control commands if the actual dimension (15) lies outside the intervention interval (12).

6. The production system as claimed in one of claims 1 to 5, characterized in that the correcting device (4) permits a preliminary operating mode in which the correcting device (4) determines every corrective intervention with reference to the current actual dimension (15) irrespective of preceding actual dimensions (15) and/or corrective interventions (16).

7. The production system as claimed in one of claims 1 to 6, characterized in that the correcting device (4) permits a main operating mode (18) in which the correcting device (4) determines the current corrective interventions (16) with reference to the current actual dimension (15) and as a function of preceding actual dimensions (15) and/or corrective interventions (16).

8. The production system as claimed in one of claims 1 to 7, characterized in that the correcting device (4) permits a main operating mode (18) in which the correcting device (4), in the event of the actual dimension (15) lying within the tolerance interval (9), produces different corrective interventions (16) than in the event of the actual dimension (15) lying outside the tolerance interval (9).

9. The production system as claimed in one of claims 1 to 8, characterized in that the correcting device (4) permits a main operating mode (18) in which the correcting device (4) automatically varies the intervention limits (13, 14) as a function of preceding actual dimensions (15) and/or corrective interventions (16).

10. The production system as claimed in claim 9, characterized in that the correcting device (4) reduces the intervention limits (13, 14) if the number of corrective interventions (16) and/or their magnitude decreases at successive actual dimensions (15), and/or in that the correcting device (4) increases the intervention limits (13, 14) if the number of corrective interventions (16) and/or their magnitude increases at successive actual dimensions (15).

11. The production system as claimed in one of claims 1 to 10, characterized in that the correcting device (4) permits a main operating mode (18) in which the correcting device (4) orients the intervention interval (12) eccentrically to the target dimension (8).

12. The production system as claimed in claim 11, characterized in that the correcting device (4), in the main operating mode (18), orients the intervention interval (12) eccentrically to the target dimension (8) until a predetermined cumulative tolerance (21) to be

adhered to by the current production batch with regard to the actual dimension (15) is achieved, and the intervention interval (12) is oriented centrally to the target dimension (8) as soon as the cumulative tolerance (21) is achieved.

13. The production system as claimed in claim 11 or 12, characterized in that the correcting device (4) sets the eccentricity with which the intervention interval (12) deviates from the target dimension (8) as a function of the cumulative tolerance (21) while taking into account the preceding actual dimensions (15) and/or corrective interventions (16).

14. The production system as claimed in claim 13, characterized in that the correcting device (4) takes into account a tool change when determining the corrective intervention (16).

15. The production system as claimed in claim 14, characterized in that the correcting device (4), when determining the corrective intervention (16), takes into account a predetermined correction limiting factor which presets a maximum corrective quantity.

16. The production system as claimed in claim 15, characterized in that the correcting device (4) takes into account the correction limiting factor only when the current actual dimension (15) lies within the tolerance interval (9).

17. The production system at least as claimed in claims 3 and 7, characterized in that the correcting device (4), during a new production cycle, works in the preliminary operating mode (17) for a predetermined or predeterminable number of products and then changes over into the main operating mode (18).

18. The production system as claimed in one of claims 1 to 17, characterized in that the correcting device (4) is designed in such a way that it can simultaneously correct a plurality of dimensions of the product which can influence one another.

19. The production system as claimed in one of claims 1 to 18, characterized in that the correcting device (4) determines the magnitude of the corrective intervention (16) as a function of the distance between the actual dimension (15) and the center of the intervention interval (12).

LIST OF DESIGNATIONS

1	Production system
2	Processing device
3	Measuring device
4	Correcting device
5	Arrow
6	Arrow
7	Arrow
8	Target dimension
9	Tolerance interval
10	Upper tolerance limit
11	Lower tolerance limit
12	Intervention interval
13	Upper intervention limit
14	Lower intervention limit
15	Actual dimension
16	Corrective intervention
17	Preliminary operating mode
18	Main operating mode
19	Start of the production cycle
20	Start of the main operating mode
21	Desired cumulative tolerance
22	Instantaneous cumulative tolerance
23	Circle